FIG. 1

40

52   56

42

42

62

60

64

44   52

44

58

FIG. 2

300 — | CAPTURE IMAGE DATA |

302 — | DETERMINE IF PIXEL IN TARGET COLOR RANGE |

304 — | APPLY SPATIAL TRANSFORMATION ON PIXELS NOT IN RANGE |

306 — | APPLY REDUCED SPATIAL TRANSFORMATION ON PIXELS IN RANGE |

FIG. 3

PIXEL NUMBER 400	COLOR 408	BACK 402	FRONT 404	THROUGH 406
1	a	b_a	f_a	t_a
2	a	b_a	f_a	t_a
3	b	b_b	f_b	t_b
4	b	b_b	f_b	t_b
5	b	b_b	f_b	t_b
6	c	b_c	f_c	t_c
7	c	b_c	f_c	t_c
8	c	b_c	f_c	t_c
9	b	b_b	f_b	t_b
10	d	b_d	f_d	t_d

FIG. 4A

PIXEL NUMBER 400	COLOR 408	BACK 402	FRONT 404	THROUGH 406
1	a	$b_a + \Delta_1$	$f_a + \Delta_2$	$t_a + \Delta_3$
2	a	$b_a + \Delta_4$	$f_a + \Delta_5$	$t_a + \Delta_6$
3	b	b_b	f_b	t_b
4	b	b_b	f_b	t_b
5	b	b_b	f_b	t_b
6	c	$b_c + \Delta_7$	$f_c + \Delta_8$	$t_c + \Delta_9$
7	c	$b_c + \Delta_{10}$	$f_c + \Delta_{11}$	$t_c + \Delta_{12}$
8	c	$b_c + \Delta_{13}$	$f_c + \Delta_{14}$	$t_c + \Delta_{15}$
9	b	b_b	f_b	t_b
10	d	$b_d + \Delta_{16}$	$f_d + \Delta_{17}$	$t_d + \Delta_{18}$

FIG. 4b

500 — CAPTURE IMAGE DATA

502 — CONVERT TO STANDARDIZED COLOR SPECIFICATION

504 — DETERMINE PIXELS IN NEUTRAL RANGE

506 — APPLY COLOR CORRECTION TO NON-NEUTRAL PIXELS

508 — APPLY GRAY CORRECTION TO NEUTRAL PIXELS

510 — CONVERT TO OUTPUT FORMAT

FIG. 5

CAPTURE IMAGE DATA — 800

CONVERT TO LINEAR-LIGHT COLOR SPACE — 802

CONVERT FROM LINEAR-LIGHT TO COLOR SPACE 1 — 804

CONVERT FROM LINEAR-LIGHT TO COLOR SPACE 2 — 806

COLOR CORRECT ALL PIXELS IN COLOR SPACE 1 — 808

COLOR CORRECT ALL PIXELS IN COLOR SPACE 2 — 810

IDENTIFY GOOD PIXELS FROM COLOR SPACE 1 — 812

IDENTIFY GOOD PIXELS FROM COLOR SPACE 2 — 814

COMBINE GOOD PIXELS FROM COLOR SPACES 1 AND 2 — 816

CONVERT COMBINATION TO OUTPUT COLOR SPACE — 818

FIG. 8

FIG. 6

b*

0*

NEUTRAL COLORS SEQUESTERED

FIG. 7

NEUTRAL COLORS
SEQUESTERED AND
GRAY-CORRECTED TOWARD
a*=0 AND b*=0

COLOR
CORRECTION

COLOR
CORRECTION

COLOR
CORRECTION

a*

b*

900 — CAPTURE IMAGE IN INPUT SPACE (BFT)

902 — CONVERT TO FIRST COLOR SPACE

904 — IDENTIFY ADVERSELY-AFFECTED PIXELS

906 — CONVERT ADVERSELY-AFFECTED PIXELS TO HSI COLOR SPACE

908 — COLOR CORRECT L* a* b* PIXELS USING Lab COLOR CORRECTION

909 — COLOR CORRECT HSI PIXELS USING HSI COLOR CORRECTION

910 — CONVERT TO OUTPUT COLOR SPACE (RGB)

920 922 903 924

Lab	Lab	Lab	Lab	Lab	Lab	Lab
Lab	Lab	Lab	Lab	Lab	xLab	Lab
Lab	xLab	Lab	Lab	Lab	xLab	Lab
Lab	xLab	Lab	Lab	Lab	Lab	Lab
Lab	Lab	Lab	Lab	Lab	Lab	Lab
Lab	Lab	Lab	Lab	Lab	Lab	Lab
Lab	Lab	Lab	Lab	Lab	Lab	Lab

920 922 907 924

Lab	Lab	Lab	Lab	Lab	Lab	Lab
Lab	Lab	Lab	Lab	Lab	HSI	Lab
Lab	HSI	Lab	Lab	Lab	HSI	Lab
Lab	HSI	Lab	Lab	Lab	Lab	Lab
Lab	Lab	Lab	Lab	Lab	Lab	Lab
Lab	Lab	Lab	Lab	Lab	Lab	Lab
Lab	Lab	Lab	Lab	Lab	Lab	Lab

920 922 911 924

Lab'	Lab'	Lab'	Lab'	Lab'	Lab'	Lab'
Lab'	Lab'	Lab'	Lab'	Lab'	HSI'	Lab'
Lab'	HSI'	Lab'	Lab'	Lab'	HSI'	Lab'
Lab'	HSI'	Lab'	Lab'	Lab'	Lab'	Lab'
Lab'	Lab'	Lab'	Lab'	Lab'	Lab'	Lab'
Lab'	Lab'	Lab'	Lab'	Lab'	Lab'	Lab'
Lab'	Lab'	Lab'	Lab'	Lab'	Lab'	Lab'

FIG. 9

$1\ (L_1, a_1, b_1)$	$2\ (L_2, a_2, b_2)$	$3\ (L_3, a_3, b_3)$	$4\ (L_4, a_4, b_4)$
$5\ (L_5, a_5, b_5)$	$6\ (L_6, a_6, b_6)$	$7\ (L_7, a_7, b_7)$	$8\ (L_8, a_8, b_8)$
$9\ (L_9, a_9, b_9)$	$10\ (L_{10}, a_{10}, b_{10})$	$11\ (L_{11}, a_{11}, b_{11})$	$12\ (L_{12}, a_{12}, b_{12})$
$13\ (L_{13}, a_{13}, b_{13})$	$14\ (L_{14}, a_{14}, b_{14})$	$15\ (L_{15}, a_{15}, b_{15})$	$16\ (L_{16}, a_{16}, b_{16})$
$17\ (L_{17}, a_{17}, b_{17})$	$18\ (L_{18}, a_{18}, b_{18})$	$19\ (L_{19}, a_{19}, b_{19})$	$20\ (L_{20}, a_{20}, b_{20})$

FIG. 10